AMENDMENTS TO THE SPECIFICATION

A. Please replace the Paragraph at page 6, line 19 through page 8, line 3 with the following paragraph:

Referring to Fig. 2, Fig. 2 is a schematic diagram showing the structure of a dual-band FR4 chip antenna, according to a preferred embodiment of the present invention. As shown in Fig. 2, the dual-band FR4 chip antenna 10 comprises: an FR4 chip base 11; a meandering radiating metal line 12; and a connecting point 13. The connecting point 13 is used for connecting the meandering radiating metal line 12 to a signal transmission line 20, and the signal transmission line 20 is used for conveying a signal for the system. The FR4 chip base 11 is a square prism made of an FR4 material, and the dielectric constant thereof is between about 4 to about 5. The thickness of the FR4 chip base 11 cannot be too small ~~,~~ ; otherwise the bandwidth of the antenna will be significantly affected. The thickness of the FR4 chip base 11 of the present invention is, for example, about 1.6 mm, and can be as small as about 0.8 mm if necessary. The meandering radiating metal line 12 is formed on at least two surfaces of the FR4 chip base 11, and is the major portion that is used by the dual-band FR4 chip antenna 10 for radiating an electromagnetic wave. The meandering radiating metal line 12 can be made of any conductors, such as silver, copper, etc. The meandering radiating metal line 12 further comprises: a ~~lower metal line~~ first segment 121 located on the lower surface of the FR4 chip base 11; ~~an upper metal~~ a second segment 122 located on the upper surface of the FR4 chip base 11; and a connecting ~~metal line~~ segment 123 located on one side of the FR4 chip base 11 for connecting the ~~lower metal line~~ first segment 121 and the ~~upper metal line~~ second segment 122. From the design point of

view, the total length of the meandering radiating metal line 12 is about 1/4λ (wavelength) of the central frequency in the antenna's first operating band. For example, with a 2450 MHz central frequency, the total length of the meandering radiating metal line 12 is about 35 mm. The size of FR4 chip base 11 of a preferred embodiment of the present invention is about 6×6×1.6 mm3, and the first and second operating bands of dual-band FR4 chip antenna 10 are around the first two resonant frequencies of the meandering radiating metal line 12. The first operating frequency can be adjusted by changing the total length of the meandering radiating metal line 12. On the other hand, the variation of the width of the meandering radiating metal line 12 can be used for adjusting the frequency ratio between the first and second resonant frequencies; for example, the width thereof can be arranged in a pattern gradually from being narrow to wide. The meandering radiating metal line 12 does not have to be a fixed width from the starting end to the finishing end, i.e. it can have a plurality of widths. Hence, through different designs of length, width and pattern of the meandering radiating metal line 12, the desired two separate operating frequencies can be achieved quite easily.

A1 end

B. Please replace the Paragraph at page 8, line 5 through page 9, line 1 with the following paragraph:

A2

Referring to Fig. 3 to Fig. 5, Fig. 3 is a schematic bottom view of a dual-band FR4 chip antenna of a preferred embodiment of the present invention, and Fig. 4 is a schematic top view of a dual-band FR4 chip antenna of a preferred embodiment of the present invention, and Fig. 5 is a schematic side view of a dual-band FR4 chip antenna

of a preferred embodiment of the present invention. As shown in Fig. 3, the ~~lower metal line~~ first segment 121 ~~has~~ is a substantially U-shaped segment having one end connected to one end of the connecting segment 123, and the other end connected to the transmission line 20 and the first segment 121 is composed of three metal lines, a first lower horizontal line; a lower vertical line; and a second lower horizontal line, meandering along three sides of FR4 chip base 11, and the portion of microwave substrate 40 contacting the first lower horizontal line of the ~~lower metal line~~ first segment 121 is covered with the ground surface 30, wherein the first lower horizontal line is at the beginning of ~~lower metal line~~ first segment 121 and usually is vertical to the signal transmission line 20. Thereafter, the first lower vertical line of the ~~lower metal line~~ first segment 121 is vertically connected to the first lower horizontal line, and the second lower horizontal line is vertically connected to the first lower vertical line. As shown in Fig. 4, the ~~upper metal line~~ second segment 122 comprises a substantially U-shaped segment having one end connected to the other end of the connecting segment 123; and a substantially L-shaped segment on the same surface plane of the U-shaped segment of the second segment 122, having one end connected to the other end of the U-shaped segment of the second segment 122, and the second segment 122 is composed of three horizontal lines and two vertical lines, which are formed sequentially that: the first upper horizontal line is formed first; then the first upper vertical line; then the second upper horizontal line; then the second upper vertical line, wherein the second upper vertical line is only extended to about the middle point of one side of the upper surface of the FR4 chip base 11; and thereafter the third upper horizontal line is formed, wherein the third upper horizontal line is shorter than the first and second upper

horizontal lines, so that it does not contact the first upper vertical line. Therefore, the meandering pattern of the metal lines of the present preferred embodiment can meet the demand of small-sized antenna.

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